

## **ABSTRACT**

The invention includes a composition that is an integrated biochip system for processing and analyzing samples using sequential tasks that take place on one or more chips. The system preferably comprises one or more active chips, and can be automated. The invention also includes methods of using an integrated biochip for processing and analyzing samples. The methods include the application of a sample to the system and performing at least two sequential tasks on at least one chip surface. The method includes the use of physical forces, such as dielectrophoretic and electromagnetic forces to process and analyze samples, and includes the use of microparticles that can be coupled to sample components to be manipulated by dielectrophoretic and electromagnetic forces.

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